5.0 CONSERVATION PLAN MITIGATION AND COMPENSATION MEASURES

The development of the HCP and the following measures is intended to provide for conservation and help in maintaining healthy populations of the Plan Species. These measures include such activities as preservation of existing habitat, enhancement of former habitat, control of native and non-native species that impact survival of Plan Species, modification of existing dam operations and construction of facilities designed to improve overall survival of Plan Species by enhancing production and improving upstream and downstream passage survival. Development of these proposed measures has been conducted in consultation with federal, state and local resource agencies and tribes.

Salmonid Species

The principal focus of the Wells HCP is to achieve "No Net Impact" to the productivity of salmonid populations originating upstream of Wells dam. The primary means of achieving this objective is to ensure a high survival rate for fish migrating through the Wells reservoir and past the project structures.

In 1990, the DCPUD, the Wells Project power purchasers, the resource agencies and Tribes entered into a long-term fisheries settlement agreement for the Wells Project. This agreement established the DCPUD's obligation for the installation and operation of juvenile downstream migrant bypass facilities and measures; hatchery compensation for fish losses; and adult fishway operation. These measures, in conjunction with existing hatchery compensation programs, were considered to conclusively fulfill the DCPUD's obligation to protect, mitigate and compensate for the effects of the Wells Project on the anadromous fish resource and were used as the basis for the HCP. Compensation was negotiated at 14 percent loss for anadromous fish with the actual loss and resulting compensation to be established through a project survival study.

The Wells Project has a functional bypass system with a fish passage efficiency of 89 percent for both spring and summer salmonid migrants. Components of NNI include an objective of 95 percent dam passage (forebay, concrete, tailrace) survival with a 91 percent survival of the total project (reservoir, dam and tailrace).

This objective includes an unavoidable loss of 9 percent of the Plan Species to be made up with productivity increases in hatchery compensation and off-site tributary habitat improvements. The existing hatchery compensation program appears to be in excess of the mitigation needs of the Wells Project.

A flow chart illustrating the decision process for how the various Wells HCP components discussed below are intended to interact over time to achieve the plan's goal of "No Net Impact" to productivity is provided in Figure 5.1.

Figure 5-1. Decision points for Wells Project on-site mitigation measures.
PLACEHOLDER

Existing Compensation

The Wells Project currently funds the operation of the Wells summer chinook and steelhead hatchery, the Methow spring chinook supplementation hatchery and the Cassimer Bar experimental sockeye facility. The Wells fish hatchery was built to fully mitigate for the effects of the Wells reservoir on salmonid spawning. The Methow hatchery, increased production from the Wells fish hatchery and the experimental sockeye program are part of the 1990 Fisheries Settlement Agreement and were intended to compensate for an assumed 14 percent project mortality to juvenile salmonids.

The Douglas PUD intends to continue to fund these programs through Phase I of the HCP. If it is determined that the existing programs over compensate for the Wells Project impacts, the DCPUD would consider allowing other mid-Columbia PUDs to utilize and fund the production capacity for their mitigation programs.

Resident Fish and other Aquatic Species

Although the Wells HCP is primarily focused on the needs of salmonid species in the mid-Columbia River area, it is intended to also apply to serve as a vehicle for mitigating any present or future adverse impacts of the Wells reservoir on aquatic animals or plant species that are dependent on the habitat within the Wells Project boundary. As of the date of adoption of the Wells HCP, there are no identified aquatic plant or animal species covered by the plan in the plan area other than the salmonids. Therefore, the Wells HCP addresses the possibility that other species may need assistance during the term of this plan.

5.1 FUNDING OF ON-SITE MITIGATION MEASURES

Each of the following on-site measures shall be fully funded by the DCPUD in accordance with this conservation plan:

5.1.1 Upstream Passage of Adult Fish

As discussed in Section 3.1, upstream passage of adult fish through both fishways and the reservoir has not been identified as a significant problem. Accordingly, the DCPUD does not plan on implementing any new mitigation measures related to upstream passage. The DCPUD will continue to work with fishery agencies and tribes to optimize passage conditions by refining operating criteria for fish ladders and developing minor structural improvements. Annual inspections of fishway facilities will continue and any identified problem or deficiencies with fishway structures or operations will be addressed. To the extent that any adult passage concerns arise during the term of the Wells HCP, they will be presented to the Wells Project Coordinating Committee (WCC) for discussion. The DCPUD will use its best efforts to undertake any

feasible adult passage measure that is biologically effective, cost efficient, and approved by the Committee.

5.1.2 Downstream Passage of Juvenile Salmonids

The Wells Project will operate the juvenile bypass system pursuant to the 1990 fisheries settlement agreement. Timing of the bypass operation will be continuous between April 10 and August 15, annually. Initiation of the bypass system may occur between April 1 and April 10 if the hydroacoustic index reaches 150, as verified by the fyke netting. Bypass termination may occur after August 15 if the hydroacoustic index declines to 250 as verified by fyke netting. The bypass system will not operate after August 31. Based on the spillway survival study in the early 1980's, the bypass survival estimate is 100 percent. The three-year fish passage efficiency (FPE) of the bypass was determined to be 89 percent for both spring and summer migrants.

The Wells Project installed new turbine runners from 1987 to 1990. These runners are highly efficient and are expected to reduce turbine mortality compared to the prior FPE estimates, but the exact mortality rate today is unknown.

Future Project Survival Studies

DCPUD, in consultation with the JFP, will develop study plans and implement studies to determine if dam survival goals of 95 percent and project survival goals of 91 percent are achieved. The DCPUD will fund a pilot study and a three or four-year full project study to assess reservoir and project survival.

Pilot Survival Study: A Pilot survival study is planned for 1998 to answer questions regarding the appropriateness of using hatchery origin fish as surrogates for in-river migrants. The pilot survival study will also answer questions concerning minimum sample size and replication requirements and in evaluating the use of the Single release-recapture methodology at the Wells Hydroelectric Project (Bickford 1997).

Full Survival Study: Following the pilot study, DCPUD will design and implement a minimum of three full years of study (1999-2001). It is anticipated the Single release-recapture methodology will be utilized to estimate yearling salmonid survival throughout the Wells reservoir, dam and tailrace. The weighted average derived from the three full years of study will be used as the point estimate of project survival. It is the intent to estimate survival at ± 5 percent at the 95 percent confidence level. If the target level of precision is not achieved during at least two of the three years of study and the overall weighted average of project survival does not meet the precision objectives then a fourth year of study will be accomplished.

Reservoir Passage

Reservoir passage issues include travel time, water quality, stranding and predation. Water quality is addressed separately in Section 5.1.3 and predation is covered in Section 5.1.4. Since the Wells Project is a run-of-river project with limited storage, the DCPUD has limited control over river flow. Limits on Wells hydroelectric project operations are set by the FERC license requirements. In light of these physical, legal and operating constraints, available mitigation measures are limited to those described in Section 5.1.3 and 5.1.4 and the following measures to limit pool fluctuations.

Reservoir Level Control

The DCPUD participates in the mid-Columbia hourly coordination of flow through the seven mid-Columbia hydroelectric projects. Hourly coordination substantially reduces river level fluctuations, thereby reducing the possibility of stranding of juvenile fish. The current hourly coordination agreement expires in 2017.

5.1.3 Water Quality

No specific water quality problems have been attributed to the Wells Project. Water quality monitoring at the Wells Project consists of total dissolved gas (TDG) supersaturation, water temperature and turbidity measurements. These measurements are part of ongoing programs. Additionally, the Wells Project cooperates with federal operators to provide nitrogen abatement spill.

5.1.4 Reservoir Production

Neither juvenile rearing nor adult spawning in the Wells reservoir appear to be of significant concern. The DCPUD participates in the Vernita Bar Settlement Agreement to protect fall chinook spawning below the Priest Rapids hydroelectric project.

5.1.5 Predator Control

Present predator control measures for the Wells Project consist of gull wires in the tailrace area and a squawfish removal project. The gull wire system was expanded in 1995 an additional 400 feet downstream to improve its effectiveness.

A squawfish removal program was initiated in 1995 with limited success. Predation is not limited to the tailrace areas, but efforts have focused there because the tailrace has the highest concentration of predators and juvenile salmonids are probably the most vulnerable in the tailrace area. The squawfish removal project was expanded in 1996 and in 1997 the DCPUD performed a radio-tagging study to determine squawfish movements, migration patterns and spawning locations. Additional study of predator behavior and population dynamics may be implemented in an effort to reduce the number of predators.

5.2 OFF-SITE COMPENSATORY ACTIONS

Off-site compensatory measures will be the plan's activities to increase salmonid productivity at areas other than the project reservoir, dam and tailrace. They are referred to as compensatory actions because they are intended to compensate for up to 2 percent unavoidable on-site losses. A Tributary Habitat Fund (Fund) will provide financial resources for appropriate actions to be taken through the Tributary Coordinating Committee to provide compensation for up to 2 percent of the unavoidable losses at the Wells Project.

The DCPUD's payments into the Fund in compliance with the Wells HCP shall satisfy fully the DCPUD's obligation for off-site compensation.

5.2.1 Wells Project Coordinating Committee

There shall be a Wells Project Coordinating Committee composed of (one) 1 technical representative of each Party to the Implementation Agreement, unless a party elects not to participate. The Coordinating Committee will be used as the primary means of consultation and coordination between the PUD and the Joint Fishery Parties (JFP) and American Rivers in connection with the conduct of studies and implementation of the measures set fourth in this Plan and for dispute resolution. Studies will be conducted following sound biological techniques and methodologies in use for similar studies in the Columbia Basin. All studies will be based on sound statistical design and analysis. Study designs and modifications to study designs will be subject to agreement by all Parties.

5.2.2 Hatchery Programs

The Wells Project currently funds the operation of the Wells summer chinook and steelhead hatchery, the Methow spring chinook supplementation hatchery and the Cassimer Bar experimental sockeye facility. The Wells fish hatchery was built to fully mitigate the effects of the Wells reservoir on salmonid spawning. The Wells fish hatchery (Wells FH) is operated by the Washington Department of Fish and Wildlife (WDFW). The Methow hatchery, operated by the WDFW, and the experimental sockeye hatchery and net pen program, operated by the Colville Tribe, are part of the Wells Project 1990 Long-term Fisheries Settlement Agreement. These production facilities, plus additional production from the Wells fish hatchery, were intended to compensate for an assumed 14 percent project mortality to juvenile salmonids.

A three- to four-year project survival study will be conducted for the Wells Project (Section 5.1.2). The results of this study will determine the level of compensation necessary for the Wells Project to achieve "No Net Impact" to the salmonid resource. It has been assumed, for initial compensation purposes, the overall total system loss through the Wells Project is estimated as a plug number to be 9 percent. The loss shall

be made through compensatory survival of productivity increases of 7 percent hatchery contribution and up to 2 percent from tributary habitat improvements. The existing hatchery program capacity was designed to compensate for a 14 percent estimated loss. If it is determined that the existing programs "over compensate" for the Wells Project impacts, DCPUD's production would be reduced. However, DCPUD would consider allowing other mid-Columbia PUDs to utilize and fund the excess production capacity of the Methow or Cassimer Bar hatcheries for their mitigation programs.

Hatchery Funding Baseline

As of the date of the Wells HCP, the DCPUD has constructed and is paying operating and maintenance expenses for several existing facilities for artificial production of salmonids. The DCPUD shall continue to pay annually the operation and maintenance cost (including study and evaluation expenses) for the Wells, Methow and Cassimer Bar (experimental sockeye program) hatcheries. This amount was $1,820,000.00 for 1996. The Methow and Cassimer Bar operation and maintenance budgets and the production from the Wells fish hatchery that is in excess to the original inundation compensation will be adjusted after the completion of the Wells Project survival study to reflect the outcome of that study.

The DCPUD shall also pay for repair or replacement of any major equipment or structural component at the Wells, Methow or Cassimer Bar hatcheries required as a result of normal wear and tear or casualty loss. Douglas PUD shall retain ownership of all hatchery land and facilities presently existing and all subsequent capital improvements thereto.

Hatchery Management

All hatcheries operated pursuant to the Wells HCP shall be managed by the current management entity, i.e. the Wells and Methow hatcheries shall be operated by the WDFW and the experimental sockeye facility by the Colville Tribe, provided WDFW and the Colville Tribe manage the hatcheries in accordance with sound biological principles.

5.2.3 Tributary Conservation Plan

Purpose

Under the Tributary Conservation Plan, the District shall provide a Plan Species Account to fund projects for the protection and restoration of Plan Species' habitat within the Columbia River Watershed (from the Chief Joseph tailrace to the Rock Island tailrace) and the Methow, Okanogan, Entiat watersheds, to compensate for up to 2 percent of Unavoidable Project Mortality. Actual measurement of whether or not the Tributary Plan compensates for 2 percent Unavoidable Project Mortality will not be required.

Tributary Committee

There shall be a Tributary Committee composed of one (1) representative of each Party and the Public Utility District No. 1 of Chelan County ("Chelan"), provided that an entity eligible to appoint a representative to the Tributary Committee is not required to appoint a representative, and further provided that, representatives from USFWS shall participate in a non-voting, ex-officio capacity unless they otherwise state in writing, and further provided that, the signatory Power Purchasers collectively will be a single Party, and shall participate through a single representative, who they will designate from time to time. The Tributary Committee may select other expert entities, such as land and water trusts/conservancy groups to serve as additional, non-voting members of the Tributary Committee. Each entity eligible to appoint a representative to the Tributary Committee shall provide all other eligible entities with written notice of its designated representative. The Tributary Committee is charged with the task of selecting projects and approving project budgets from the Plan Species Account for purposes of implementing the Tributary Plan. The Parties shall choose and the District of Chelan shall fund, independent of the Plan Species Account, a neutral third party to record and distribute minutes of Tributary Committee meetings.

Meeting

The Tributary Committee shall meet not less than twice per year at times determined by the Tributary Committee. Additionally, the Tributary Committee may meet whenever requested by any two (2) members following a minimum of ten (10) days advance written notice to all members of the Tributary Committee unless a member waives notice. The notice shall contain an agenda of all matters to be addressed during the meeting.

Voting

The Tributary Committee shall act upon the consensus of its members that appointed a representative, except as set forth below in "Prohibited Uses of Account."

Coordination With Other Conservation Plans

Whenever feasible, projects selected by the Tributary Committee shall take into consideration and be coordinated with other conservation plans or programs. Whenever feasible, the Tributary Committee shall cost-share with other programs, seek matching funds, and "piggy-back" programs onto other habitat efforts.

Plan Species Account

The District shall establish a Plan Species Account in accordance with applicable provisions of Washington State law and this Agreement. Interest earned on the funds in the Plan Species Account shall remain in the Plan Species Account. The Parties to this Agreement may audit the District's records relating to the Account during normal business hours following reasonable notice. The Tributary Committee shall select projects and approve project budgets from the Plan Species Account by joint written request of all members of the Tributary Committee. The Tributary Committee shall act in strict accordance with the following:

Prohibited Uses of Account: No money from the Plan Species Account shall be used to enforce compliance with this Agreement. Members of the Tributary Committee and their expenses shall not be compensated through the Plan Species Account. Administrative costs, staffing and consultants, reports and brochures, landowner assistance and public education costs collectively shall not exceed $80,000 (1998 dollars) in any given year without the unanimous vote of the Tributary Committee.

Financial Reports: At least annually, the District shall provide financial reports of Plan Species Account activity to the Tributary Committee.

Selection of Projects and Approval of Budgets: The Tributary Committee shall select projects and approve budgets for expenditure from the Plan Species Account for the following: (1) Any action, structure, facility, program or measure (referred to herein generally as "projects") intended to further the purpose of the Tributary Plan for Plan Species. Projects shall be chosen based upon the guidelines set forth in **Exhibit ___ Tributary Compensation Plan Species Account Project Selection, Implementation, and Evaluation Plan and Exhibit ____ Aquatic Species and Habitat Assessment: Wenatchee, Entiat, Methow, and Okanogan Rivers.** Projects shall not be implemented outside the area specified previously in "Purpose." High priority shall be given to the acquisition of land or interests in land such as

conservation easements or water rights or interests in water such as dry year lease options; (2) Studies, implementation, monitoring, evaluation, and legal (expenses) associated with any project financed from the Plan Species Account; and (3) Prior approved administrative expenses associated with the Plan Species Account.

Ownership of Assets: Determinations regarding ownership of real and personal property purchased with funds from the Plan Species Account shall be made by the Tributary Committee. Title may be held by the District or Chelan, by a resource agency or tribe or by a land or water conservancy group, as determined by the Tributary Committee. Unless the Tributary Committee determines that there is compelling reason for ownership by another entity, the District or Chelan shall have the right to hold title. All real property purchased shall include permanent deed restrictions to assure protection and conservation of habitat.

Reversion Upon Termination: Upon the Agreement's termination, the Plan Species Account, less charges authorized by the Tributary Committee, shall remain with the District, and all real and personal property which the District owns shall remain its property.

Account Status Upon Termination: Upon the Agreement's termination, (1) the District's advance contributions to the Plan Species Account shall be promptly returned to the District, and (2) if funds remain in the Plan Species Account after the return of the District's advance contributions, then the Tributary Committee shall remain in existence and continue to operate according to the terms of this Agreement until the funds in the Plan Species Account are exhausted.

The District shall make an initial contribution of $991,000 (1%) in 1998 dollars to the Plan Species Account. The District will conduct survival studies called for in this Agreement. If after five years, the results of the survival studies show that the Wells Total Project Survival is equal to or more than 95 percent, the District shall do the following: 1) make annual payments of $88,089 (1%) in 1998 dollars as long as the Agreement is in effect; or 2) provide an up front payment of $1,321,333 (1% for 15 years) in 1998 dollars but deducting the actual cost of bond issuance and interest.

If after five years, Total Project Survival is less than 95 percent, the District shall contribute $991,000 in 1998 dollars plus interest from day one of the Agreement (equivalent to 2%) and shall do the following: 1) make annual payments of $176,178 (2%) in 1998 dollars as long as the Agreement is in effect; or 2) provide an up front payment of $2,642,667 (2% for 15 years) in 1998 dollars, but deducting the actual cost of bond issuance and interest.

If the Total Project Survival at the Wells Project had been equal to or greater than 95 percent and the survival subsequently falls below 95 percent, the District will contribute prospectively for the remaining time of the Agreement the equivalent to make a 2 percent credit in 1998 dollars to the Plan Species Account.

The choice of annual or up front payment, discussed above, shall be made by the JFP and American Rivers.

At the end of 20 years, the Parties will determine the distribution of the remaining funds to the Plan Species Account in amounts equivalent to annual payments of $88,089 (1%) in 1998 dollars or $176,178 (2%) in 1998 dollars, as the case may be.

The first installment is due within ninety (90) days of the effective date of the Agreement. The rest of the installments are due by the 31st day of January each year thereafter.

Inflation Adjustment.

Unless stated otherwise, the dollar figures set fourth in this Section are expressed in 1998 dollars and shall be adjusted for inflation on the 1st day of January each year during the term of the Agreement. The inflation rate shall be based on the "Consumer Price Index for all Urban Consumers" for the Seattle/Tacoma area, published by the U.S. Department of Labor, Bureau of Labor Statistics. If this index is discontinued or becomes unavailable, a comparable index suitable to the Tributary Committee shall be substituted.

The DCPUD's contribution to the Fund, and fulfillment of its obligations under the hatchery program, as required herein, shall fully satisfy the DCPUD's obligation under the Wells HCP to provide measures or actions to compensate for unavoidable losses at the Wells Project. It shall also constitute full compensation for Well's contribution to any cumulative losses.